

# Divide-Couple-Recombine(DCR) Combinatorial Synthesis

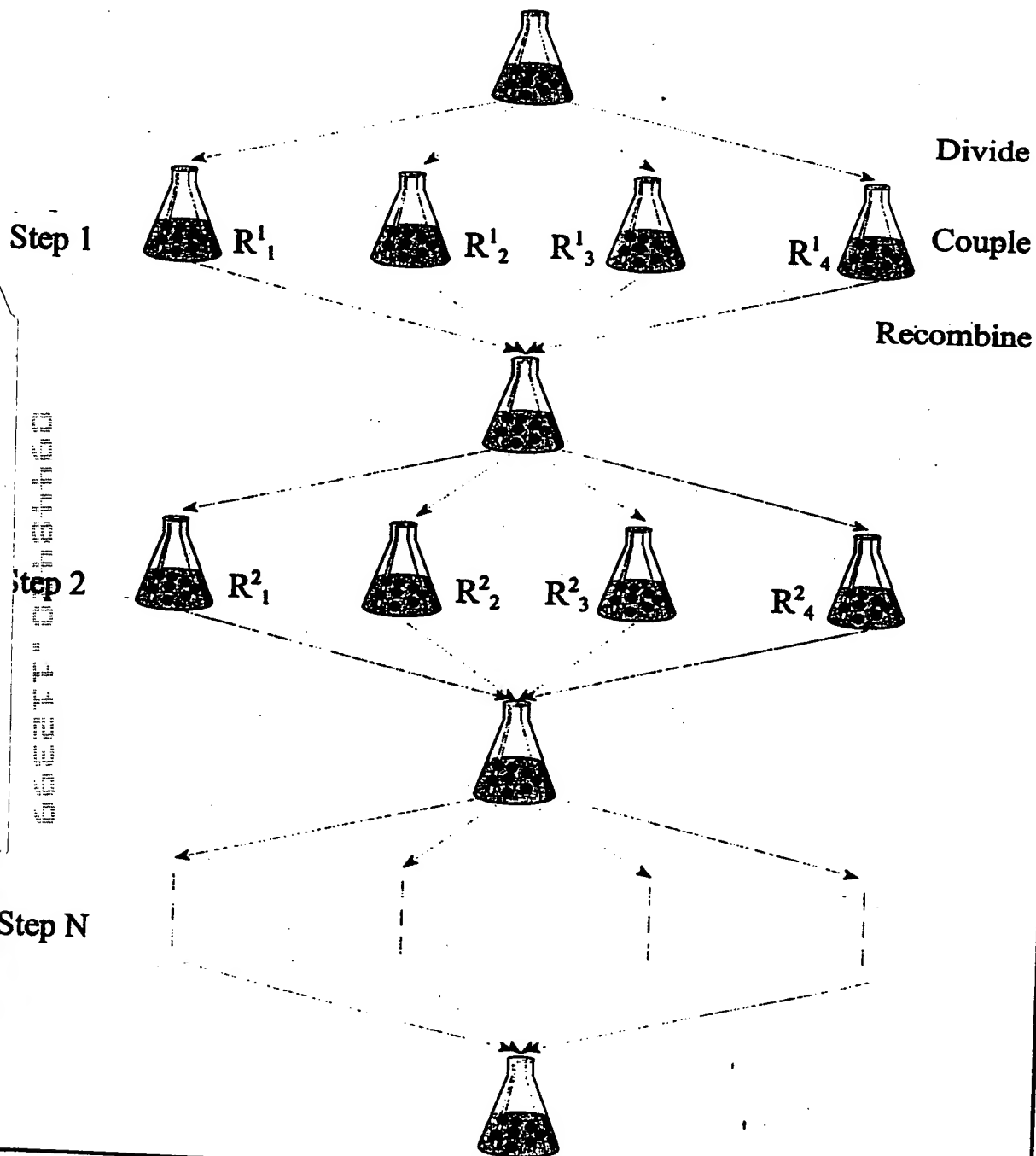
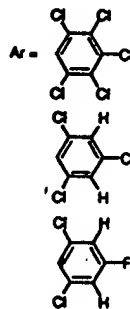
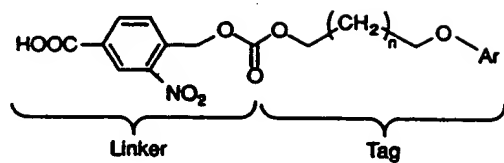
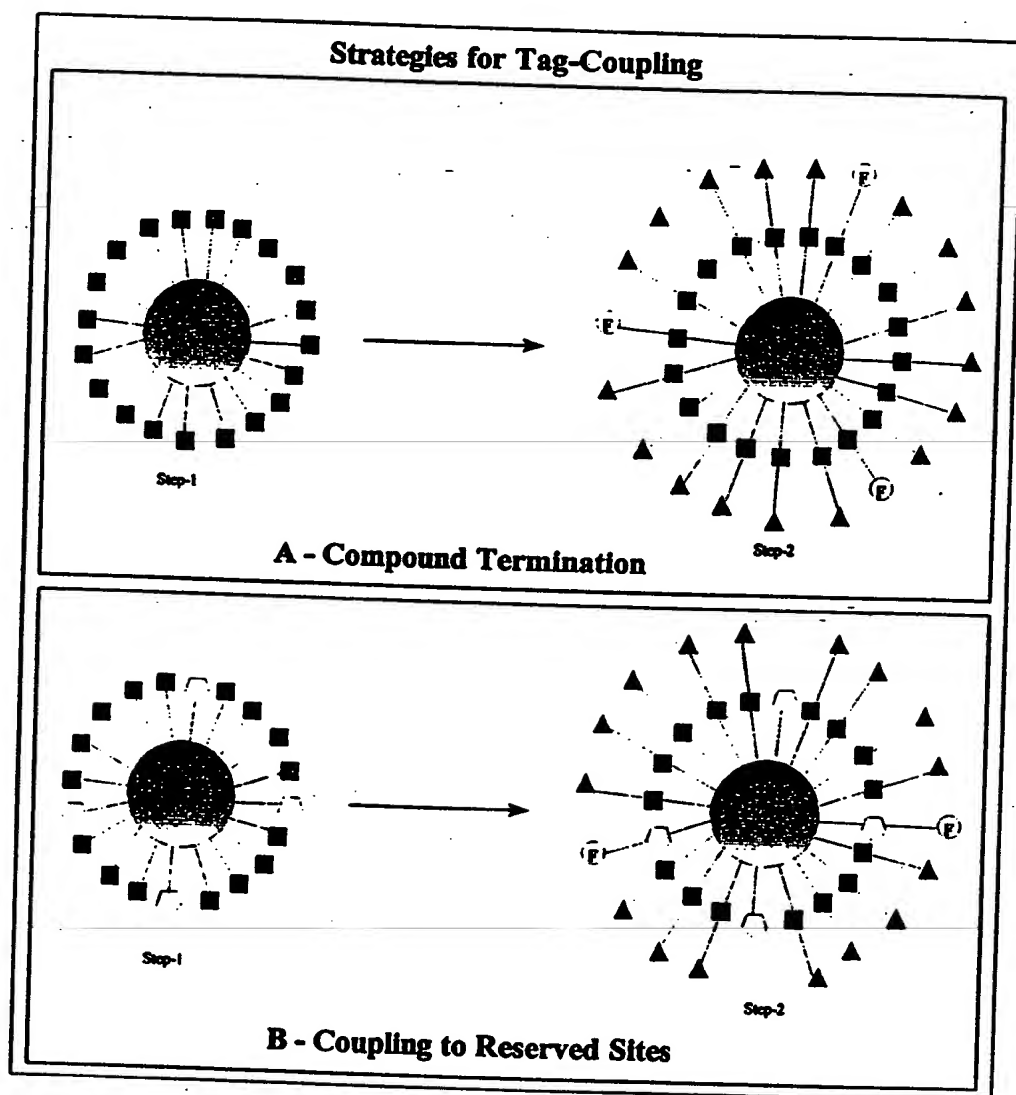


FIGURE 1

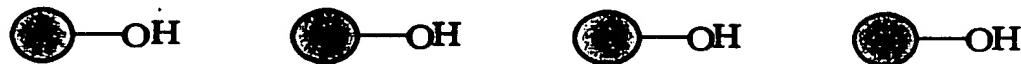
[illegible]

**SHEET 2 OF 9**

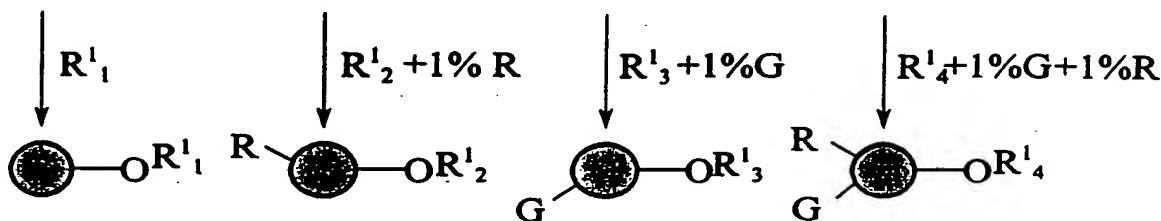


**FIGURE 3**

**Step 1: Divide beads into 4 groups**

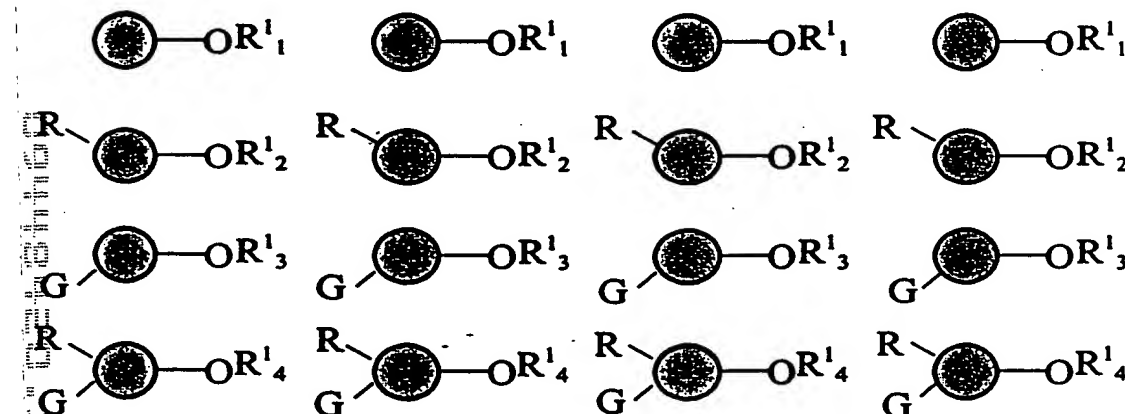


**Couple with first set of amino acids and color labels**

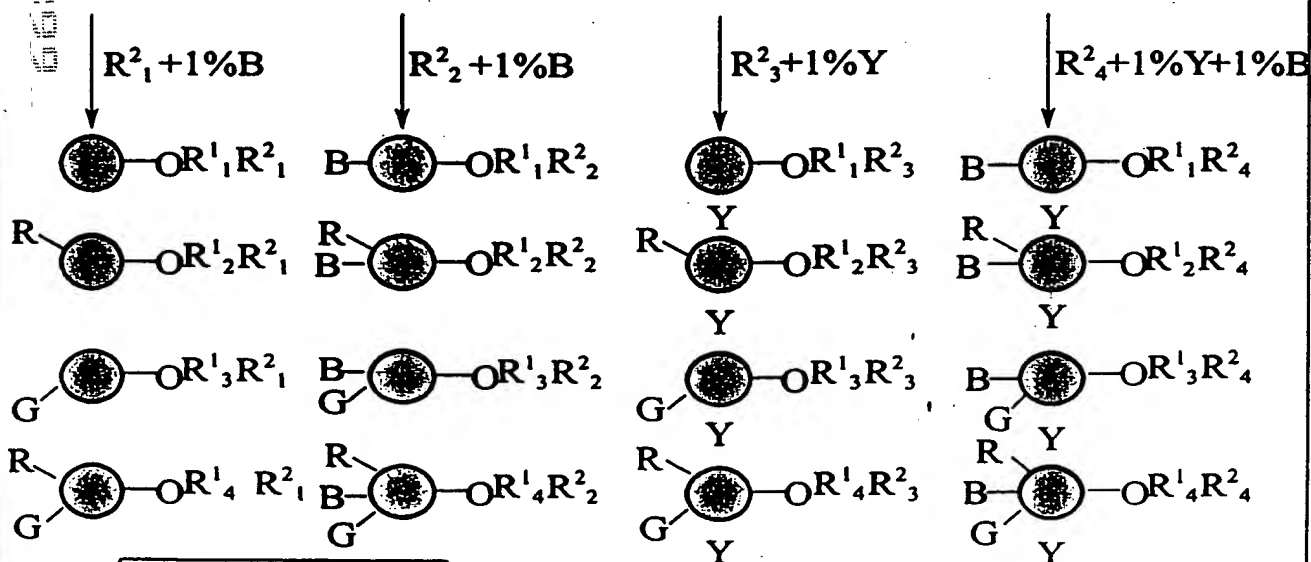


**Recombine beads**

**Step 2: Divide beads into 4 groups**



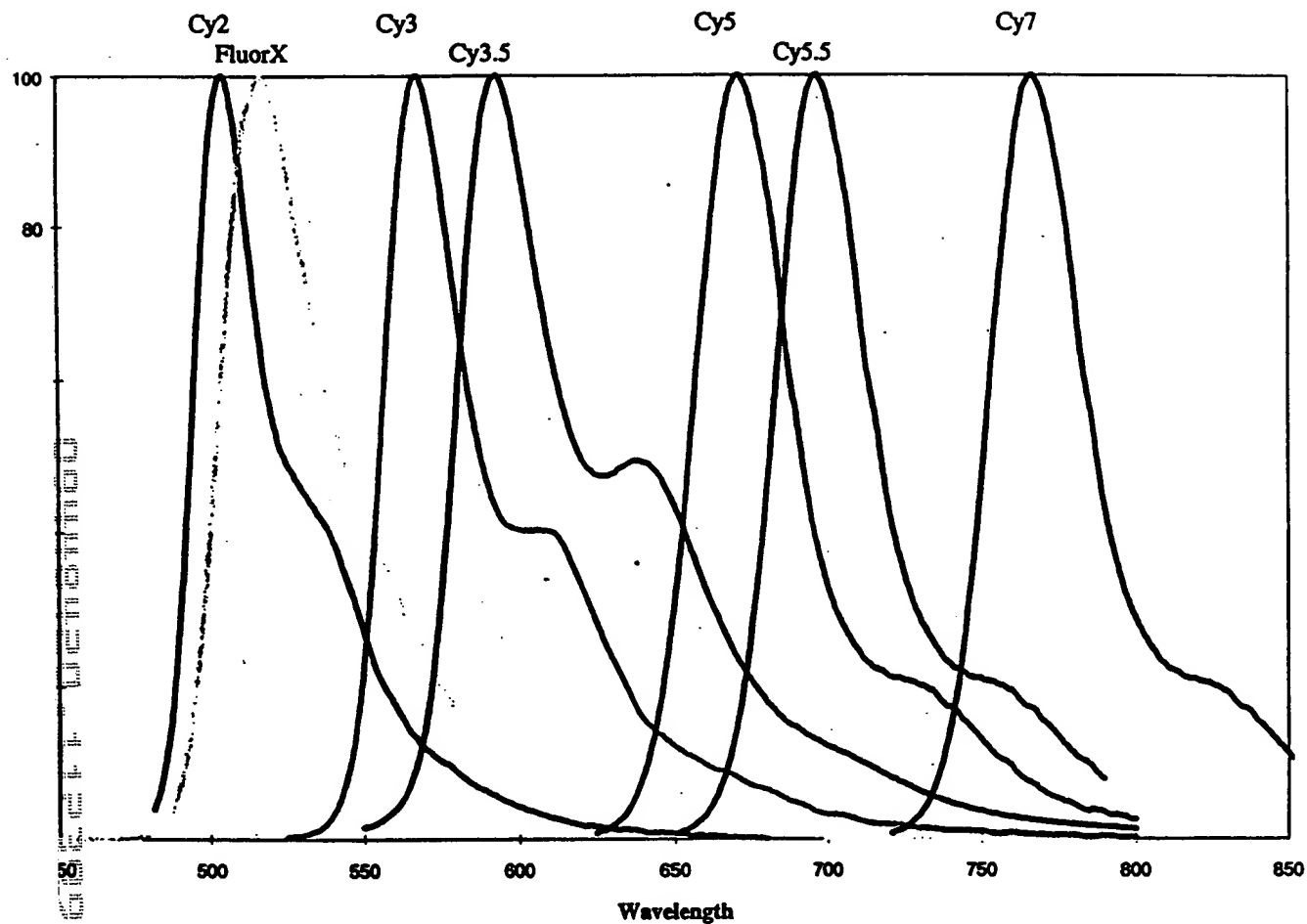
**Couple with second set of amino acids and color labels**



**R combine beads**

FIGURE 4

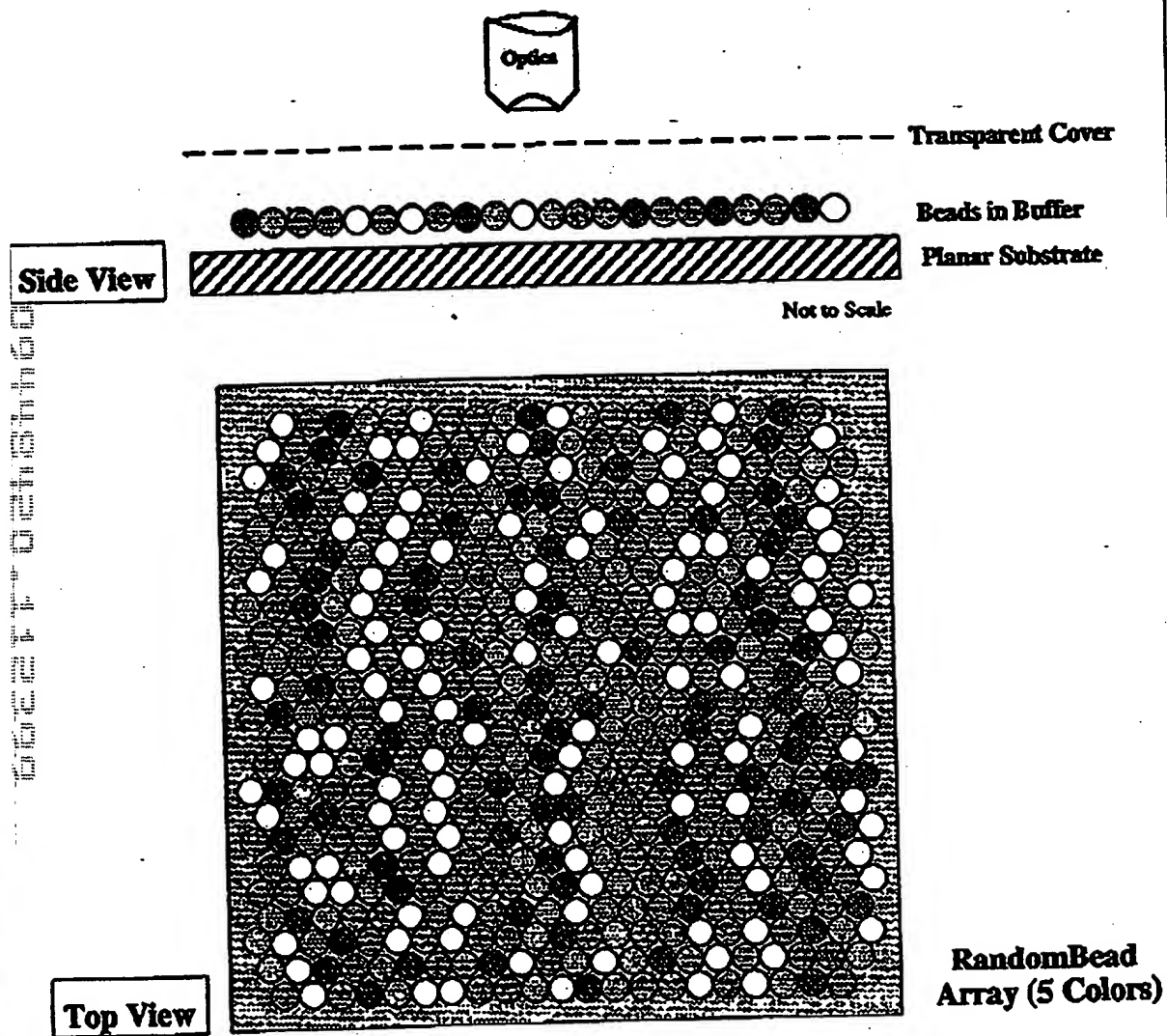
## Emission Spectra of the CyDye Fluorescent Dyes



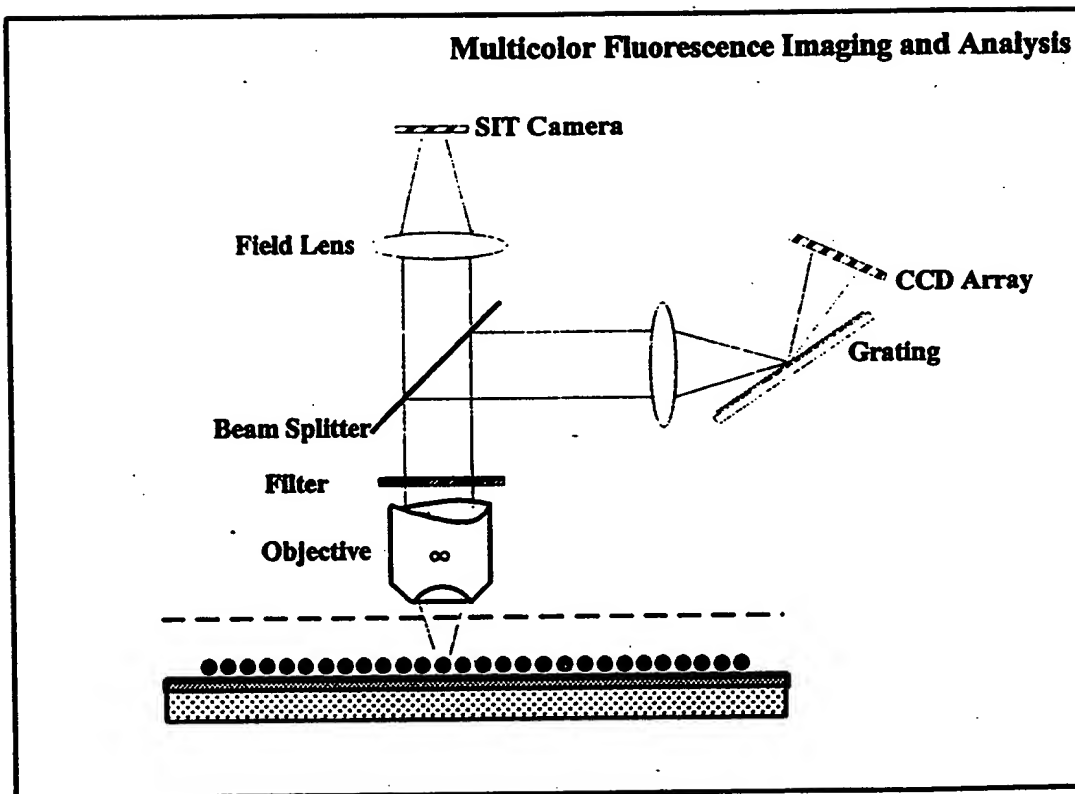
| Fluorophore | Color Of Fluorescence | Absorption Maximum (nm) | Fluorescence Maximum (nm) | Extinction Coefficient ( $M^{-1}cm^{-1}$ ) | Quantum Yield for protein conjugates | Formula Weight (daltons) |          |
|-------------|-----------------------|-------------------------|---------------------------|--|--------------------------------------|--------------------------|----------|
|             |                       |                         |                           |  |                                      | Bisfnc.                  | Monofnc. |
| Cy2         | Green                 | 489 nm                  | 506 nm                    | ~ 150,000                                  | >0.12                                | 896.95                   | 713.78   |
| Cy3         | Orange                | 550 nm                  | 570 nm                    | 150,000                                    | >0.15                                | 949.11                   | 765.95   |
| Cy3.5       | Scarlet               | 581 nm                  | 596 nm                    | 150,000                                    | >0.15                                | 1285.54                  | 1102.37  |
| Cy5         | Far-Red               | 649 nm                  | 670 nm                    | 250,000                                    | >0.28                                | 975.15                   | 791.99   |
| Cy5.5       | Near IR               | 675 nm                  | 694 nm                    | 250,000                                    | >0.28                                | 1311.58                  | 1128.41  |
| Cy7         | Near IR               | 743 nm                  | 767 nm                    | ~ 250,000                                  | ~ 0.28                               | 1001.19                  | 818.02   |
| FluorX      | Green                 | 494 nm                  | 520 nm                    | 68,000                                     | 0.3                                  |                          | 586.6    |

**FIGURE 5**

# Multi-Agent Diagnostic Assay In Bead-Array Format

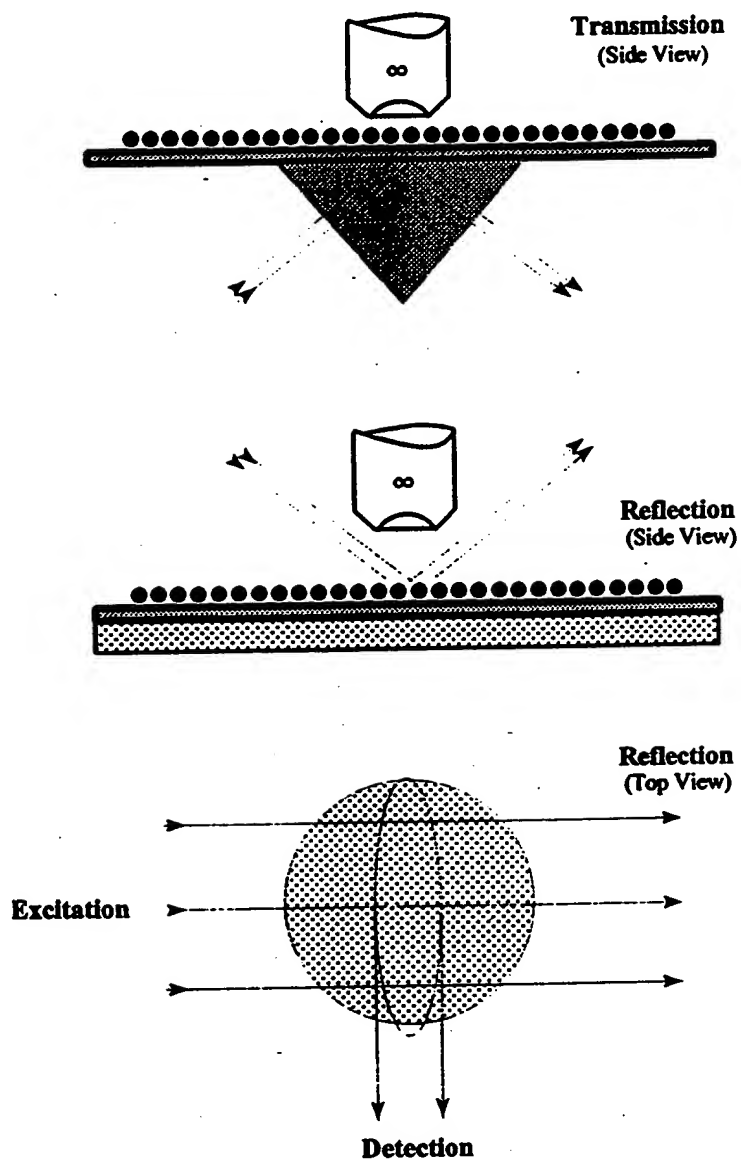


**FIGURE 6**



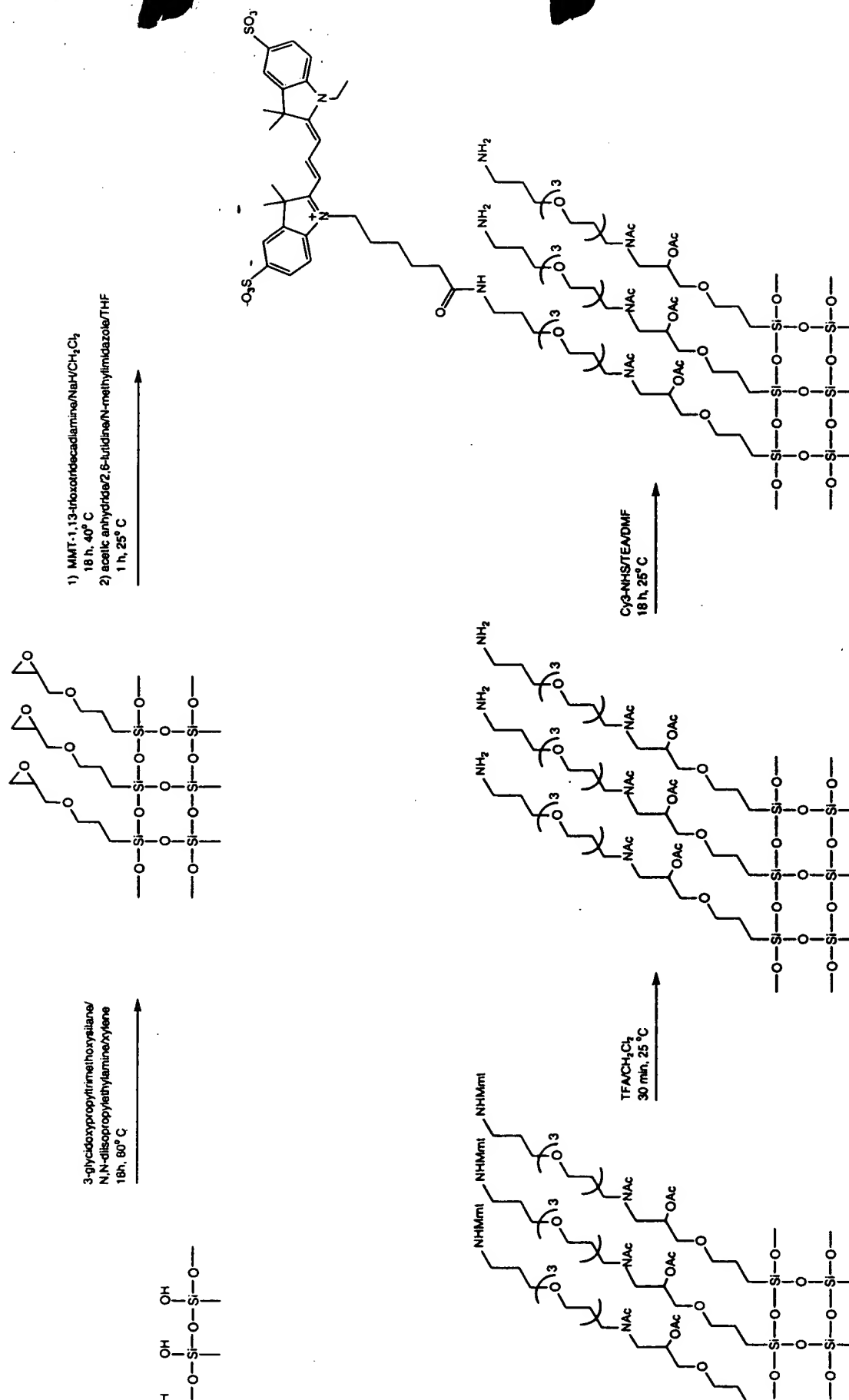
**FIGURE 7**

# Multicolor Fluorescence Imaging and Analysis



**FIGURE 8**





## FIGURE 9